

REMARKS

Claims 1 through 21 and new Claims 22 and 23 are pending in the application.

Applicants acknowledge with gratitude the Examiner's apparent indication that Claims 3 and 10 are patentable in light of the art of record.

Claim 1 has been amended to emphasize that the inventive shirred food casings exhibit sufficient intrinsic stability to be processed without separate support. Support for this amendment can be found in the Application as filed, for example at Page 3, lines 24 through 28.

Claim 1 has further been amended to emphasize advantageous inventive shirred tubular single-layer or multilayer food casing consisting essentially of synthetic polymers which comprise aliphatic polyamides or copolyamides, polyether block amides, polyurethanes, biodegradable polyesters, and mixtures thereof. Support for this amendment can be found in the Application as filed, for example at Page 5, line 30 through Page 6, line 12 in conjunction with Page 8, lines 5 through 11.

Claim 1 has also been amended to emphasize that such advantageous inventive shirred food casings (i) bend under the effect of their own weight by no more than 20 %, based on the length between two support points and at room temperature, and (ii) exhibit a water vapor permeability of 20 to 10000 g/m²d. Support for this amendment can be found in the Application as filed, for example at Page 5, lines 11 through 14 and Page 7, lines 4 through 7.

Claims 2, 4 and 16 have been amended to correct grammatical or typographical errors.

Claim 3 has been amended into independent form.

Claims 5, 11 and 20 have been canceled, as their subject matter has been incorporated into Claim 1.

Claims 22 and 23 have been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 22 is directed to advantageous inventive intrinsically stable shirred food casings in which the shirred casing further includes at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment, and the resulting shirred casing extends in the longitudinal direction by no more than 10 % when it is stored on a smooth, planar support, without packaging, at room temperature and 60 % relative humidity. Support for Claim 22 can be found in the Application as filed, for example at Page 4, lines 18 through 24; Page 5, lines 4 through 9; Page 6, lines 26 through 30 and Page 8, lines 5 through 17.

Claim 23 is directed to advantageous inventive intrinsically stable shirred food casings which additionally comprise water-soluble polymers selected from polyvinylpyrrolidone and partially or completely saponified polyvinylacetate. Support for Claim 23 can be found on Page 6, lines 1 through 6.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

Section 112 Rejection

Claim 1 stands rejected as indefinite over the terms "net" and "reinforcing packaging". The Examiner is correct in that Applicant does, in fact, intend for the foregoing recitation to indicate that the casing is self-supported. Applicants further respectfully submit that the terms "net" and "reinforcing packaging" are both well known terms that are readily understood by

one skilled in the art. However, solely to advance prosecution of the above-referenced case, Claim 1 has been to recite the phrase "without separate support" in lieu of "net" and "reinforcing packaging." As noted above, support for this non-narrowing amendment can be found in the Application-as-filed. Accordingly, Applicants respectfully request withdrawal of the foregoing rejection.

Claim 3 stands rejected over the recitation of "sigma-5 value." Applicants respectfully submit that the foregoing term is likewise well known to one skilled in the art, and refers to the force representing 5% tensile strength. Accordingly, the scope of Claim 3 is clearly "reasonably ascertainable" by one skilled in the art. *Energizer Holdings v ITC* (Fed. Cir. 2006). Applicants thus respectfully request withdrawal of the foregoing rejection.

Claim 10 stands rejected over the recitation "nominal caliber." The nominal caliber is well known to one skilled in the art as defining the average interior diameter of a food casing prior to stuffing. Accordingly, the scope of Claim 10 is similarly clearly "reasonably ascertainable" by one skilled in the art. Applicants thus respectfully request withdrawal of the foregoing rejection, as well.

*The Claimed Invention is Patentable
in Light of the Art of Record*

Claims 1, 6 through 8, 11, 12, 14, and 20 stand rejected as either anticipated by or obvious in light of United States Published Patent Application No. 2004/0062834 to Cruz ("US 834").

Claims 1, 2, 4, 5, 8, 9, 13, 15 through 20 and 21 stand rejected as either anticipated by or obvious in light of United States Patent No. 7,001,635 to Merritt et al. ("US 635").

It may be useful to briefly consider the invention before addressing the merits of the rejection.

Food casings, especially sausage casings, are predominantly offered in shirred form. Cellulose-based casings, such as those disclosed in US 635, are known. Shirred sticks formed from synthetic polymers are also known; however, such shirred sticks are generally not very stable without net-type or reinforcing packaging, and are thus not in widespread use. For example, heretofore known synthetic polymer-based casings exhibit a relatively high resilience, resulting in the re-expansion of the shirred stick and associated pleat loss. (In that regard, the Examiner's attention is kindly directed to the Application-as-filed on Page 2, lines 1 through 14, as well as US 835, Para. 0016, fifth sentence).

In addition to shirred pleat stability, polymer-based food casings should advantageously provide a balance of additional properties, including only modest bending of the shirred tube (thereby avoiding the conventional external reinforcement) and acceptable water vapor permeability.

Unexpectedly, Applicants have found synthetic polymeric food casings that impart a heretofore unknown balance of beneficial properties, including advantageous tensile properties and water vapor permeability.

Applicants have more particularly found that food casing consisting essentially of synthetic polymers comprising "soft" polymers selected from aliphatic polyamides and copolyamides, polyether block amides, polyurethanes and biodegradable polyesters bends under the effect of its own weight by no more than 20 % and exhibits a water vapor permeability of 20 to 10000 g/m² d, as recited in the claims as-amended.

In particularly advantageous embodiments, the inventive food casing further comprises at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment, and the resulting shirred casing extends in the longitudinal direction by no more than 10 %, as recited in newly added Claim 22.

The cited references do not teach or suggest the claimed invention.

US 834 is generally directed to chorizo casings including a silicon-based barrier control agent that purportedly provides a balance of permeability and processing. [Para. 0017]. Evidencing conventional wisdom, US 834 teaches that casings formed from conventional polyamide blends can be too rigid and also suffer from “un-shirring” prior to stuffing. US 834 goes on to note that for those and “other reasons” polyamide casings “are not used today.” [Para. 0016]. US 834 attempts to solve the foregoing issues by incorporating a silicon-based barrier control agent, preferably a silsesquioxane. [Paras. 0017, 0018 and 0024]. US 834 further discloses application of a cellulosic based release agent inside its casings. [Paras. 0033 - 0036]

There would have been no motivation to have looked to US 834, whose entire impetus is the incorporation a silicon-based barrier control agent. However, even if Applicants had looked to US 834 (which they did not) the claimed invention would not have resulted.

US 834, requiring a silicon-based barrier control agent, does not teach or suggest the recited food casing consisting essentially of synthetic polymers, said polymers comprising aliphatic polyamides and copolyamides, polyether block amides, polyurethanes, biodegradable polyesters or mixtures thereof, much less that such a food casing bends under the effect of its own weight by no more than 20 % and exhibits a water vapor permeability of 20 to 10000 g/m² d, as recited in the claims as-amended.

And US 834, teaching that casings suffer from “un-shirring” in the absence of its required silicon agent, most certainly do not teach or suggest such advantageous food casings in which the shirred casing extends in the longitudinal direction by no more than 15 %, as recited in Claim 4.

Thus US 834 can not teach or suggest advantageous food casings further comprising at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m

imparted by corona treatment and the resulting shirred casing extends in the longitudinal direction by no more than 10 %, as recited in newly added Claim 22.

US 834 is also silent regarding incorporation of water-soluble polymers, such as polyvinylpyrrolidone, which can be advantageously admixed with the inventive soft polymer-based sausage casings, as recited in newly added Claim 23.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of US 834, considered either alone or in combination with the remaining art of record.

US 635 likewise fails to teach or suggest the claimed invention.

US 635 is generally directed to cellulosic casings containing liquid smoke that provide an enhanced smoky color and flavor to foods. (Col. 1, lines 6 through 10 and Col. 6, lines 9 through 24). US 635 merely generically notes that casings formed from polymeric materials may be used within its invention. (Col. 6, lines 55 – 57). US 635 teaches the application of coatings, particularly inner coatings, that may contain an “anti-pleat lock” agent. (Col. 7, lines 1 – 5). It is furthermore disclosed that the (cellulosic) casings can be treated with a shirring solution and shirred into self-sustaining sticks (Col. 7, lines 10 – 12).

Applicants respectfully submit that there would have been no motivation to have looked to US 635, which is primarily directed to cellulosic casings having enhanced smoke transport. However, even if Applicants had looked to US 635 (which they did not), the claimed invention would not result.

US 635, generically referencing polymeric food casings, does not teach or suggest the recited food casing consisting essentially of synthetic polymers, said polymers comprising aliphatic polyamides and copolyamides, polyether block amides, polyurethanes, biodegradable polyesters or mixtures thereof, much less that such a food casing bends under the effect of its

own weight by no more than 20 % and exhibits a water vapor permeability of 20 to 10000 g/m² d, as recited in the claims as-amended.

Nor does US 635 teach or suggest such advantageous food casings in which the shirred casing extends in the longitudinal direction by no more than 15 %, as recited in Claim 4.

And US 635, teaching coatings that promote shirred stick expansion, most certainly does not teach or suggest that advantageous food casings further comprising at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment would result in shirred casings extending in the longitudinal direction by no more than 10 %, as recited in newly added Claim 22. Applicants respectfully submit that the “anti-pleat lock” coatings of US 635, designed to promote the release of shirred pleats, instead teaches away from the advantageous embodiments of Claim 22.

Accordingly, US 635 likewise fails to teach or suggest the claimed invention.

Consideration of Previously Submitted Information Disclosure Statement

It is noted that an initialed copy of the PTO/SB/08A and PTO/SB/08B that were submitted with one of the two Information Disclosure Statements filed February 14, 2006 have not been returned to Applicants’ representative with the Office Action. Accordingly, it is requested that an initialed copy of the PTO/SB/08A and PTO/SB/08B forms be forwarded to the undersigned with the next communication from the PTO. In order to facilitate review of the references by the Examiner, a copy of this Information Disclosure Statement and the PTO/SB/08A and PTO/SB/08B forms are attached hereto. Copies of the cited references were provided at the time of filing the original Information Disclosure Statement, and, therefore, no additional copies of the references are submitted herewith. Applicants will be pleased to provide additional copies of the references upon the Examiner’s request if it proves difficult to locate the original references.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 4, 6 through 10, and 12 through 19, 21 through 23 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,

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